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EXAMINER	
SAOUD, CHRISTINE J	

ART UNIT	PAPER NUMBER
1647	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/928,522	SPURLOCK, MICHAEL E.	
	Examiner	Art Unit	
	Christine J. Saoud	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-30 and 39-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-30 and 39-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claims 13, 17-18, 21-22, 24-25, 27-30, 43, and 45 have been amended and claims 50-51 have been added as requested in the paper filed 10 August 2005. Claims 1-12 and 31-38 are canceled. Claims 13-30 and 39-51 are pending in the instant application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Any objection or rejection of record which is not expressly repeated in this action has been overcome by Applicant's response and withdrawn.

Applicant's arguments filed 10 August 2005 have been fully considered but they are not deemed to be persuasive.

> It is suggested that in future correspondence that Applicant address the rejections in the order in which they are presented. This would provide a prosecution history that is easier to follow and understand.

Requests for Interviews

Embedded in the response spanning pages 25-26, Applicant refers to a potential interview request. Applicant is advised, that requests for interviews should be made

telephonically. Applicant is referred to MPEP 408, 713.01 and CFR § 1.133. It is noted that an interview was scheduled, but Applicant was not able to attend.

Cancelled claims

Applicant's statements regarding allowability of cancelled claims is noted. However, Applicant has no basis to argue this point since the claims are no longer pending in the application.

> Applicant's continued assertion after every argument that the claims are allowable is noted. However, the Examiner will hold conclusions regarding patentability till the end of the Office action.

Claim Rejections - 35 USC § 112

Claims 13-30 and 38-51 are rejected under 35 U.S.C. 1 12, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The instant claims are generically directed to isolated DNA and RNA which encode bovine leptin, wherein the nucleic acid molecule hybridizes to a nucleic acid sequence of SEQ ID NO:3 (or a variant thereof) under stringent hybridization conditions. However, the only such molecule disclosed in the instant specification is the nucleic acid molecule of SEQ ID NO:3 which encodes the protein of SEQ ID NO:4.

Applicant argues that "the Examiner apparently contends that disclosure of the structure (sequence) of only one molecule allegedly limits an inventor to only claiming

that single molecule". Applicant's argument has been fully considered, but is not persuasive. The Examiner never stated such, nor concluded such, nor alleged such, nor implied such with regard to the written description rejection. The Examiner did point out statements of the inventor, Dr. Spurlock, which are relevant and have direct bearing on the rejection. As stated previously, Dr. Spurlock concluded

> The bottom line is that you do not know the bovine leptin sequence until you have the bovine leptin sequence. Even then, you may have variations within the species because of the genetic diversity that exists within all species populations. Some of these variations may be very important relative to the functionality of the protein. (paragraph 6 of the 1.132 Declaration filed in parent application 08/688,908).

If one of ordinary skill in the art would not know the bovine leptin sequence until they were in possession of the bovine leptin sequence, it is unclear how the instant claims meet the written description requirement when the specification provides one bovine leptin sequence, but is claiming a vast genus of molecules which have not been isolated or described. Even if one of ordinary skill in the art could use the disclosed polynucleotide sequence to hybridize to bovine polynucleotides, the skilled artisan would not know if they were in possession of bovine leptin as stated so clearly by the inventor himself.

Applicant asserts at page 13 of the response that based on the disclosure of SEQ ID NO:3, one of ordinary skill in the art would recognize that "still other related species falling within the claims are in the possession of the inventor". Applicant's assertion is noted, but is contradicted by Dr. Spurlock's own statements, as pointed out above.

Applicant argues at page 13 of the response that Example 9 of the Written Description Guidelines is analogous to the instant fact pattern. Applicant's argument has been carefully considered, but it is not persuasive. In Example 9 of the Written Description Guidelines, although hybridizing nucleic acids were not sequenced, they were isolated, expressed and "several were shown to encode proteins" which were functional. There is no such disclosure for the claimed invention. Applicant also argues that Example 10 of the Written Description Guidelines is analogous to the instant fact pattern. In Example 10, the single disclosed species was found to be representative of the genus because reduction to practice of this species, considered along with the defined hybridization conditions and the level of skill and knowledge in the art, are sufficient to allow the skilled artisan to recognize that applicant was in possession of the necessary common attributes or features of the elements possessed by the members of the genus. This is not the case in the instant application. There is no evidence that the single disclosed species is representative of the genus; there are no defined hybridization conditions (see rejection under 112/2nd paragraph) and there is no evidence that the necessary common attributes or features of the elements possessed by the members of the genus are present.

Applicant asserts that the Declaration of Dr. Spurlock in the parent application does not relate to bovine leptin, but rather to differences between leptin of different species. This point is noted, but it still does not detract from the statement of Dr. Spurlock that the "bottom line is that you do not know the bovine leptin sequence until you have the bovine leptin sequence". Given the bovine leptin sequence of SEQ ID

NO:3, how can one predict any other bovine leptin sequence? How can one envision any other bovine leptin sequence without knowing where the regions of 100% homology occur within the sequences. Dr. Spurlock's statements regarding knowing or contemplating the exact sequence of a leptin gene in another species are just as relevant to the issue of predicting additional leptin genes in a single species.

Applicant argues at page 15 of the response that Dr. Spurlock did not "indicate what he means by functionality" and that the Examiner's conclusion is "purely speculative and therefore meaningless". Applicant's argument has been considered, but not found persuasive. The term "functionality" is being given its ordinary meaning – a thing is functional if it works and not functional if it doesn't work. The specification uses the term "functional derivative" as well as the latest Declaration under 1.131 wherein Applicant asserts that the 450 bp clone is a "functional derivative, functional variant". If the Examiner's conclusion is purely speculative and meaningless, Applicant will need to provide clarification as to what functional means if the assumed meaning is incorrect.

Claims 13-30, 39-51 are rejected under 35 U.S.C. 1 12, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention for the reasons of record.

Applicant argues that the Kennes article demonstrates that the scientific literature does indeed recognize nucleic acid molecules having at least about 20 bases of a nucleotide sequence derived from a leptin gene that encodes a leptin molecule. Applicant's argument has been considered, but is not persuasive. The issue the Examiner was raising was not directed to the meaning of the term "encode", but rather with the recitation that the encoded molecule be "leptin". The claims have been amended such that they do not read on a nucleic acid having 20 bases and the limitation of encoding a bovine leptin polypeptide. For clarity sake, the molecule of Kennes et al which "encodes leptin" is much longer than 20 bases. If leptin is roughly 145 amino acids long, it would require at least 435 nucleotides to encode for the protein. The molecules of Kennes et al. have many more nucleotides, based on the location of the polymorphisms found (i.e. positions 2845, 3996, 2728, 3469). Therefore, on its face, the specification does not teach a polynucleotide as short as 20 bases in length which also encodes bovine leptin. The claims previously recited "at least about 20", but the claims must be enabled for their full breadth, and the lower limit of 20 was not enabled. This argument is moot in light of the claim amendments which now include "and encodes at least a fragment", because 20 nucleotides could encode a fragment.

The claims are still not enabled for hybridization to at least about 20 bases or 50 bases and encoding a bovine leptin polypeptide. The lower limits of the claims are directed to hybridization to 20 nucleotides or 50 nucleotides. If only 20 nucleotides hybridize, the percent identity is roughly 4% identity. If only 50 nucleotides hybridize, the percent identity is roughly 11% identity. Considering that between species (human

to bovine), there is conservation of approximately 88%, one of ordinary skill in the art would not reasonably expect conservation of only 4-11% to provide for a polynucleotide that encodes a bovine leptin polypeptide. There are no examples of a single variant of bovine leptin in the instant specification, and there is a but a single example of a bovine leptin in the instant specification. While the skill in the art is high, there is no guidance or direction provided in the instant specification for making mutations or variations to the given coding sequence; there is no disclosure of which regions of the molecule should be conserved or which regions could be variable. Based on the teachings of the prior art, one might expect that the nucleic acid encoding bovine leptin could be varied to some degree (12% based on the conservation with the human protein), but would this molecule still be considered a "bovine" leptin? If the nucleic acid is not present in the cow, can it still be considered bovine leptin. Or if the starting material is from cow, and the molecule is mutated such that it now has the sequence of the human molecule, is it still considered "bovine" leptin? Regardless, the issue is that based on the lack of guidance in the specification and the prior art for only 4-11% identity to the given molecule, the lack of examples, and the degree of unpredictability in the art, the claims are not enabled for the full breadth of the claims, absent evidence to the contrary.

Claim Rejections - 35 USC § 112/2nd

Claims 13, 24, 25, 27-30, 43 and 45 were rejected for reciting the article "a" in place of "the" when referring to the sequence represented by a sequence identifier. This is indefinite when referring to a single sequence because reference to a specific

sequence would require the use of the article "the". The use of "a" implies that there are multiple sequences to chose from or represented by the sequence identifier, which is not the case when referring to a specific sequence as one is when referencing a sequence identifier. Applicant asserts that the claims were definite in scope – this is a spurious argument with no reasoning to support it. Applicant refers to MPEP § 2173.05(e) as the rationale for using "a" or "an" in place of "the". After reading this section of the MPEP, the Examiner can find no mention or suggestion for using the article "a" or "an" in place of "the". The Examiner's explanation appears to be on point. Applicant's amendment to the claims has obviated this ground of rejection.

Claims 14, 15, 17-20 are indefinite for the recitation "at least about" in conjunction with a number of nucleotides which are to hybridize for the reasons of record in the previous Office action. This recitation is indefinite because the lower limits of what are to be encompassed by the claims are not clear. The instant specification does not indicate what range "at least about" is meant to encompass. Furthermore, "at least" is in direct conflict with "about" since "at least" sets a lower limit to the range, but "about" changes that limit. Therefore, the claims are indefinite because the metes and bounds of "at least about" cannot be determined.

Applicant argues this rejection at page 18 of the response. Applicant asserts that the term "at least about X" could alternatively be written as "about X or more" and "no one of ordinary skill in the art would be confused about the meaning of "at least about X". Applicant's argument has been fully considered but is not found to be persuasive.

The phrase "at least" has a definite meaning; it sets a very definite lower limit for the number of nucleotides which are to hybridize. The term "about" is not specific to the precise number of nucleotides which are to hybridize. The use of the two phrases/terms together makes the claims indefinite because the metes and bounds of the number of nucleotides which are to hybridize cannot be determined. For example, does the claim encompass 15 nucleotides? Would 25 nucleotides be encompassed by "at least about 50"? Does the claim encompass 10 nucleotides? The skilled artisan would have no idea if they were infringing the claim because the metes and bounds are not clear and definite. The rejection is maintained for the reasons of record.

Claims 13-30 and 39-51 are indefinite for the limitation of "stringent hybridization conditions". The limitation "stringent hybridization conditions" is equivalent to reciting a range without indicating the metes and bounds of the conditions since there is no indication of what conditions are to be encompassed by the claims. The specification does not provide a definition of what conditions are considered "stringent" and the art recognizes a multitude of conditions which could be used and considered "stringent". Because a multitude of conditions are encompassed by the claims, it is not clear which molecules which may hybridize under varying conditions are encompassed by the claims. New claims 50-51 recite a variety of conditions and indicate that any of the conditions in any combination or all of the conditions are included. This still does not set forth a "set of conditions" by which the nucleic acid molecules will be isolated, therefore, there are still variables unaccounted for which will greatly affect which

molecules will hybridize and which will not. Therefore, the metes and bounds of the claims are unclear and the claims are indefinite.

Applicant argues this rejection at pages 19-22. Applicant's arguments have been considered, but are not deemed to be persuasive. Applicant states that the use of broad terminology does not necessarily render a claim indefinite. Applicant is correct in saying that breadth does not equate to indefiniteness. However, this is not the case in the instant application. The metes and bounds of the claims cannot be determined because the claims encompass a wide host of molecules depending on which conditions are intended by the terminology "stringent hybridization conditions" and those skilled in the art would not know which conditions are intended by the claims because the metes and bounds of what is covered by the claims is unclear. In the absence of a true definition in the specification that indicates what conditions are intended by "stringent", the rejection is maintained for the reasons of record.

Claims 16, 21, 23, 24, 26, 28, 29 are directed to nucleic acid molecules (DNA, mRNA) which "hybridizes" to "substantially all" of the bases of a recited sequence. However, these claims are indefinite for the failure to indicate what is intended by the recitation "substantially all".

Applicant argues at pages 23-24 that "substantially all" is definite. Applicant's arguments have been carefully considered but have not been found to be persuasive. First, Applicant again refers to U.S. Pat. No. 6,756,484. Again, the Examiner will not comment on the prosecution of another application. This patent is not directed to

nucleic acid molecules which hybridize to substantially all of the bases of a recited sequence. Therefore, it is not germane to the instant fact situation. Applicant's assertion of "differential treatment" is not supported by any facts of record.

The specification does not define "substantially all" and its use in conjunction with the indefinite "stringent hybridization conditions" clearly does not provide sufficient explanation of the metes and bounds of the claims. Applicant states that "the meaning of the term "substantially all" clearly means something less than "all," yet more than "half". Applicant has provided no basis in the specification for this conclusion or definition. Applicant may mean 50%-100%, but someone in the art may view "substantially all" to be 80-100% while another researcher may view this to be 90-100%. Because the specification fails to include a definition of "substantially all" it would be "purely speculative and therefore meaningless" to conclude that "substantially all" "clearly means something less than "all," yet more than "half"" (see Applicant's own arguments at page 15 of this response regarding placing definitions on a term used by another with no clear definition provided). Because the metes and bounds of what is being claimed is unclear, the claims are indefinite.

Claim Rejections - 35 USC § 102

Claims 25-30, 41-42, 45-49 and new claims 50-51 are rejected under 35 U.S.C. 102(a) as being anticipated by TELLAM et al. (Genbank Acc. No. U43943, Bos Taurus OBESE mRNA, 27 January 1996) for the reasons of record in the previous Office actions).

Applicant asserts that the Declaration under 37 CFR 1.131 is sufficient to overcome the instant rejection. MPEP 715.03(b) states that proof of prior completion of a species different from the species of the reference will be sufficient to overcome a reference indirectly under 37 CFR 1 .131 if the species shown in the reference would have been obvious in view of the species shown to have been made by the applicant. After reviewing of the Declaration filed 16 December 2004, the nature of the "450 base pair clone" was understood. For the record, the description of the comparisons to be made by the Declarant were confusing. The nucleic acid molecule in Exhibit B is double stranded – the comparison to be made is with the bottom strand in the reverse orientation. Additionally, the markings over and the bases makes it very difficult to read. Regardless, it is clear that the "450 base pair clone" described is different from the nucleic acid molecule of the instant specification.

Applicant argues at page 26 of the response that based "on possession of one or both of these species, the question ... is whether one of ordinary skill in the art would recognize that still other related species falling within the claims were in possession of the inventor [invention] prior to the effective date of the Tellam reference". Applicant's argument has been considered, but is not persuasive. This is not the question to be asked. MPEP 715.03 is very pointed as to what is required in order to antedate a reference under 102(a) directed to a species when the claims are directed to a genus:

> The principle is well established that the disclosure of a species in a cited reference is sufficient to prevent a later applicant from obtaining a "generic claim." In re Gosteli, 872 F.2d 1008, 10 USPQ2d 1614 (Fed. Cir. 1989); In re Slayter, 276 F.2d 408, 125 USPQ 345 (CCPA 1960).
>
> Where the only pertinent disclosure in the reference or activity is a single species of the claimed genus, the applicant can overcome the rejection directly

> under 37 CFR 1.131 by showing prior possession of the species disclosed in the reference or activity. On the other hand, a reference or activity which discloses several species of a claimed genus can be overcome directly under 37 CFR 1.131 only by a showing that the applicant completed, prior to the date of the reference or activity, all of the species shown in the reference. In re Stempel, 241 F.2d 755, 113 USPQ 77 (CCPA 1957).
>
> Proof of prior completion of a species different from the species of the reference or activity will be sufficient to overcome a reference indirectly under 37 CFR 1.131 if the species shown in the reference or activity would have been obvious in view of the species shown to have been made by the applicant. In re Clarke, 356 F.2d 987, 148 USPQ 665 (CCPA 1966); In re Plumb, 470 F.2d 1403, 176 USPQ 323 (CCPA 1973); In re Hostettler, 356 F.2d 562, 148 USPQ 514 (CCPA 1966). Alternatively, if the applicant cannot show possession of the species of the reference or activity in this manner, the applicant may be able to antedate the reference or activity indirectly by, for example, showing prior completion of one or more species which put him or her in possession of the claimed genus prior to the reference's or activity's date. The test is whether the species completed by applicant prior to the reference date or the activity's date provided an adequate basis for inferring that the invention has generic applicability. In re Plumb, 470 F.2d 1403, 176 USPQ 323 (CCPA 1973); In re Rainer, 390 F.2d 771, 156 USPQ 334 (CCPA 1968); In re Clarke, 356 F.2d 987, 148 USPQ 665 (CCPA 1966); In re Shokal, 242 F.2d 771, 113 USPQ 283 (CCPA 1957).
>
> It is not necessary for the affidavit evidence to show that the applicant viewed his or her invention as encompassing more than the species actually made. The test is whether the facts set out in the affidavit are such as would persuade one skilled in the art that the applicant possessed so much of the invention as is shown in the reference or activity. In re Schaub, 537 F.2d 509, 190 USPQ 324 (CCPA 1976).

(1) While Applicant has provided proof of prior completion of a species different from the species of the reference, it is not sufficient to overcome the reference because the species shown in the reference would not have been obvious in view of the species shown to have been made by the Applicant. There is no suggestion to modify the "450 base pair clone" at any position in order to arrive at the molecule of Tellam.

(2) Applicant may be able to antedate the reference indirectly, if the species completed by Applicant prior to the reference date provided an adequate basis for inferring that the

invention has generic applicability. However, the disclosure of this additional species does not appear to satisfy this requirement because the evidence presented is not commensurate in scope with the claims. The true test is whether the facts set out in the affidavit are such as would persuade one skilled in the art that the applicant possessed so much of the invention as is shown in the reference or activity. In re Schaub, 537 F.2d 509, 190 USPQ 324 (CCPA 1976). There is no evidence that Applicant possessed the invention as is shown in the reference. Furthermore, the breadth of the claims is such that they encompass molecules which have only about 4-11% identity to the disclosed nucleic acid molecule yet encode a bovine leptin polypeptide. The molecule of the "450 base pair clone" only differs from the molecule in the instant specification by about 3 base pairs – therefore, this clearly does not support the breadth of the generic claims.

The Declaration filed on 16 December 2004 under 37 CFR 1.131 is sufficient to overcome the Tellam reference for the reasons provided above.

Claim Rejections - 35 USC § 103

Claims 13-24 are under 35 U.S.C. 103(a) as being unpatentable over TELLAM et al. (Genbank Acc. No. U43943, Bos taurus OBESE mRNA, 27 January 1996) for the reasons of record in the previous Office action(s).

As stated previously TELLAM et al. disclose a nucleic acid molecule (mRNA) which is an allelic variant of SEQ ID NO:3 of the instant application. TELLAM et al. do not disclose single or double stranded DNA, an expression vector or plasmid comprising the DNA or a host cell transformed or transfected with the plasmid. However, at the time

of the instant invention, it would have been prima facie obvious to one of ordinary skill in the art to use the mRNA molecule of TELLAM et al. to generate a DNA molecule, which could then be placed into an expression vector or plasmid, and then placed into a host cell for the purpose of propagating the nucleic acid, as well as for expression of the encoded protein of the nucleic acid of TELLAM et al. One would be motivated to do this because TELLAM et al. identify the nucleic acid as encoding bovine obesity protein (a.k.a. leptin) and this protein is known to be valuable in regulation of weight in mammals. At the time of the instant invention, such methods and techniques were old and well-known in the art, as evidenced by the disclosure of the instant specification at pages 9-10, therefore, a reasonable expectation of success was also present.

Applicant argues at pages 27-28 that "the mere disclosure of the mRNA molecule in Tellam ... does not teach or suggest the ... transformation to the complementary cDNA molecule. That teaching or suggestion must necessarily come from outside the Tellam submission and apparently came by virtue of hindsight reconstruction". Applicant's argument has been considered, but is not persuasive. As pointed out previously, TELLAM et al. identified the mRNA molecule as encoding bovine obesity protein. With the mRNA, the skilled artisan has the necessary information to produce a recombinant protein encoding bovine obesity protein. The motivation to produce such a protein comes from the identification by TELLAM et al. that the protein is a leptin from cows and it was well known in the art at the time the invention was made that leptin was related to regulation of weight in mammals. The methods necessary to create expression vectors or plasmids and host cells are "conventional techniques" and

available to those skilled in the art, as stated in the specification (page 10, lines 10-17). Therefore, a *prima facie* case of obviousness was made, and does not rely on hindsight reasoning, contrary to Applicant's assertion. Therefore, in response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The specification is not being used to make obvious the instant invention, but rather to establish that construction of vectors and host cells was conventional and well-known to those skilled in the art at the time the invention was made.

Applicant asserts at page 28 that the Declaration filed under 1.131 obviates the instant rejection. This argument is not persuasive for the reasons provide above.

Claims 21-30 and 39-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman et al. (U.S. Pat. No. 6,309,853) for the reasons of record in the previous Office action(s) as applied to the previously filed claims.

Applicant argues the rejection at pages 29-31 of the response. Applicant's arguments appear to be based on the premise that the bovine leptin of the instant application is functionally different from the human and mouse leptin of the prior art.

However, the rejection is not one of anticipation, but rather that the human and mouse leptin of the prior art meet the limitation of being functional derivatives based on the disclosure of the instant specification at page 7. A ""functional derivative" refers to any "fragment", "variant", "analog", or "chemical derivative" of the bovine adipocyte polypeptide that retains at least a portion of the function of the bovine adipocyte leptin" (see page 7). Therefore, Friedman et al. teach nucleic acid molecules which are "functional derivatives" and "derivatives" of the bovine leptin of the instant application and because they possess "at least a portion of the function of the bovine adipocyte leptin". Friedman et al. teach that the nucleic acid molecules encoding leptin could be used to isolate nucleic acid molecules encoding leptin from other species, specifically cows (see column 48, lines 41-57), contrary to Applicant's assertion that "the Friedman patent does not teach, suggest or disclose the invention of the above-identified application". The claims are broadly directed to isolated nucleic acids which encode bovine leptin – based on the known high degree of nucleic acid similarity of the leptin molecules across species (taught in Friedman), the known existence of a bovine leptin molecule (taught in Friedman), motivation to isolate nucleic acid molecules encoding bovine leptin (taught in Friedman) and known methods of isolation of nucleic acid molecules encoding leptin using one species as a probe (taught in Friedman), the invention as a whole would have been *prima facie* obvious in view of Friedman.

Applicant's arguments at pages 29-30 regarding specific activities of bovine leptin are noted, but do not avoid the rejection of record. The claims do not require these specific activities and the specification only requires "at least a portion of the

function of the bovine adipocyte leptin". This function would include any function, such as binding to a leptin receptor, antigenicity, etc. Therefore, Applicant's arguments are not persuasive.

Applicant argues that "the Examiner switched horses and basically alleged Applicants could only consider functional properties disclosed for bovine leptin in the present application. This is an erroneous and overly restrictive view by the examiner." Applicant's arguments have been considered, but are not persuasive. The claims do not require the isolated molecule to encode a bovine leptin with any particular biological activity. If one of ordinary skill in the art used the polynucleotides of Friedman et al. to hybridize to bovine polynucleotides using the methods taught in Friedman et al., there is more than a reasonable expectation of success in isolating a bovine version of leptin, especially since Friedman already confirmed that there was a polynucleotide encoding leptin present in cows, absent evidence to the contrary.

Applicant argues at page 31 that the Examiner merely makes conclusions and does not properly reject the claims under 103. In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Furthermore, the rejection was based on the disclosure of

Friedman, the success Friedman had in isolating a different species of leptin while using another species as a probe, the disclosure that leptin existed in cows, and the specific statement of motivation in Friedman to isolate the molecules from other species, including cows, and the very methods necessary to achieve this goal. Applicant has not provided any evidence on the record that one of ordinary skill in the art could not follow the teachings and guidance in Friedman et al. to isolate nucleic acids encoding leptin in cows. The fact that the encoded protein has some very specific biological properties in the cow is interesting, but not persuasive for the reasons given above and does not avoid the rejection of record.

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine J. Saoud whose telephone number is 571-272-0891. The examiner can normally be reached on Monday-Friday, 6AM-2PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback can be reached on 571-272-0961. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CHRISTINE J. SAOUD
PRIMARY EXAMINER
Christine J. Saoud